Using Jabber XMPP-based Messaging in the AG

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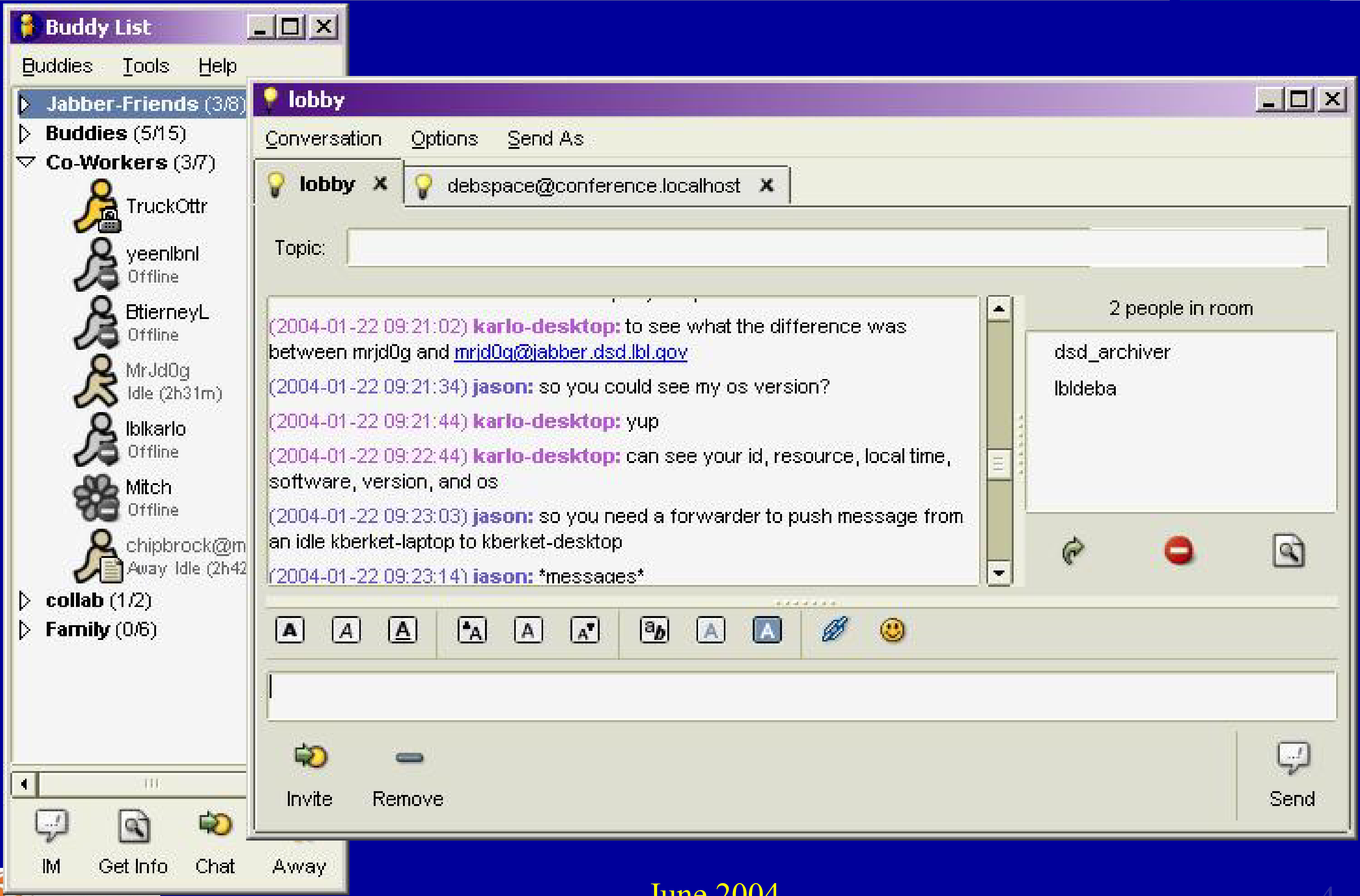
Jabber - Presence and Messaging

- "Jabber" is a set of standard protocols for streaming XML elements between any two points on a network
- Provides near-real-time messaging
- Provides presence, messaging, and multi-user chats
- Open and extensible protocols
- Stable and widely used (on the order of millions of users)
- Large and active developer community, organized by the "Jabber Software Foundation"
- Client/server architecture

Jabber Protocol Architecture

- “Streaming” XML messages over a (duplex) TCP connection
- Messages are addressed to a “Jabber ID” (JID), which is ***user@server/resource***
- ***Network of servers** handle messages, and route messages not intended for them*
- ***Clients** live at the “edges” and talk to servers*

Jabber Messaging



(2004-01-22 09:21:02) **karlo-desktop:** to see what the difference was between mrjd0g and mrjd0g@jabber.dsd.lbl.gov

(2004-01-22 09:21:34) **jason:** so you could see my os version?

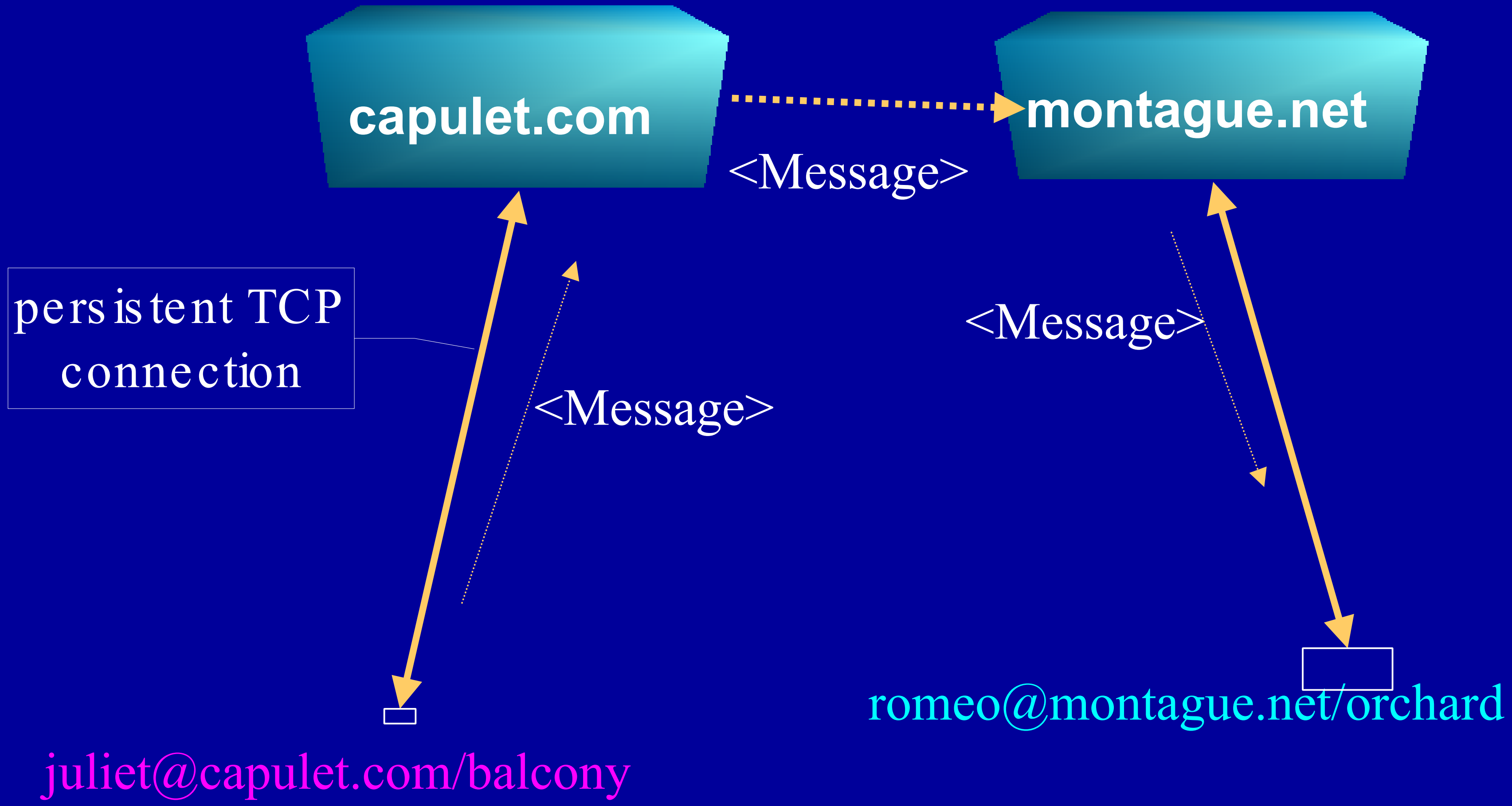
(2004-01-22 09:21:44) **karlo-desktop:** yup

(2004-01-22 09:22:44) **karlo-desktop:** can see your id, resource, local time, software, version, and os

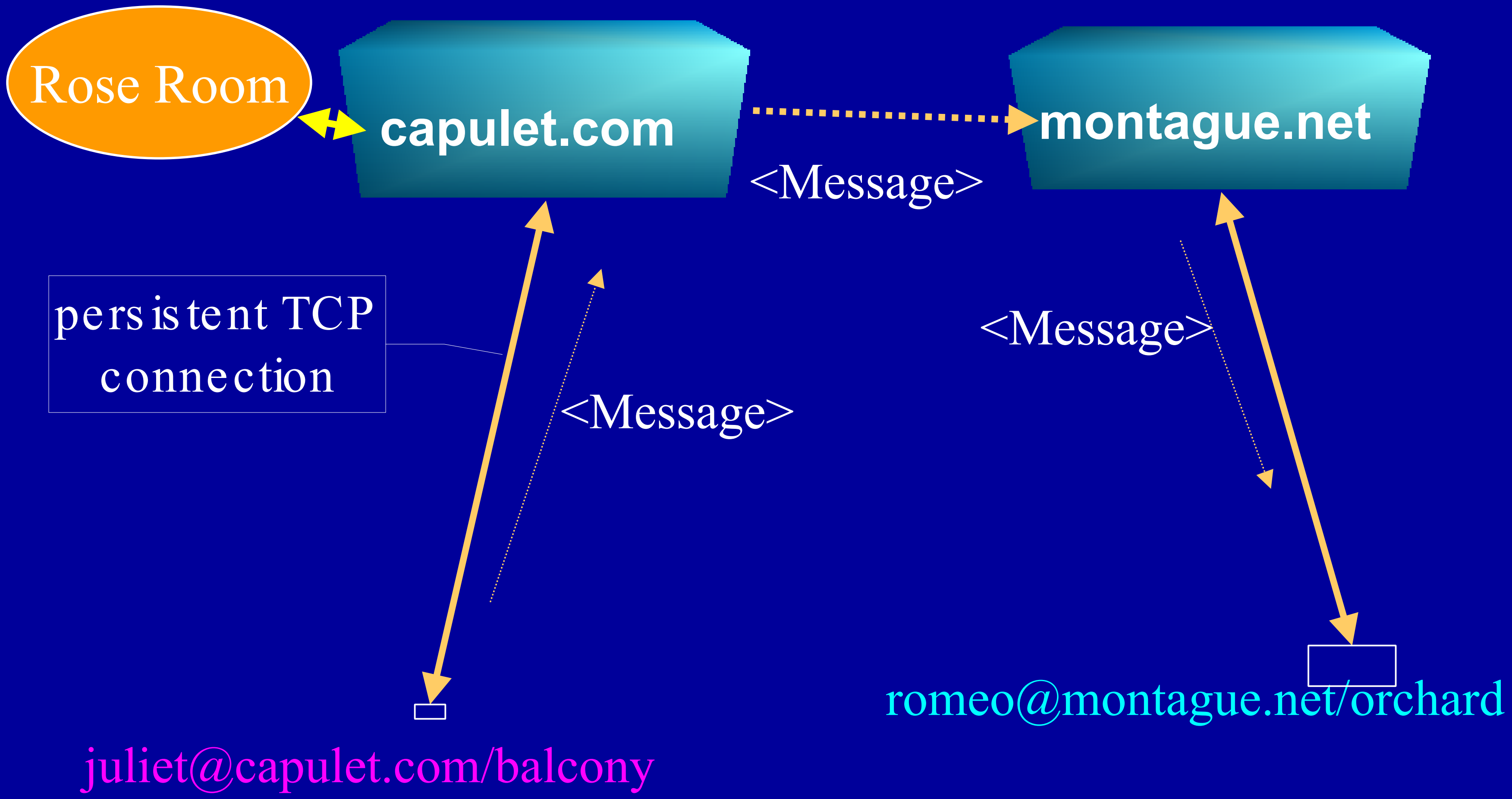
(2004-01-22 09:23:03) **jason:** so you need a forwarder to push message from an idle kberket-laptop to kberket-desktop

(2004-01-22 09:23:14) **jason:** *messages*

Jabber Message Delivery


capulet.com
montague.net
<Message>
persistent TCP connection
<Message>
<Message>
romeo@montague.net/orchard
juliet@capulet.com/balcony

Jabber Multi-User Chat


Rose Room
capulet.com
montague.net
<Message>
persistent TCP connection
<Message>
<Message>
romeo@montague.net/orchard
juliet@capulet.com/balcony

Jabber Features

- Variety – many different clients available
- Presence information - list of people in chat
- Buddy list – quick dial
- Context - when enter multi-user chat get scrollbars buffer worth of conversation
- Status - ability to set an away/status message
- Familiarity – set preferences
- Private conversations – one-to-one chat and whisper
- Fun - emoticons
- Multi-location – can be in many conversations at once
- Multi-platform - several clients support multiple protocols (AIM, IRC, ICQ, etc)

XMPP Standards

- 2002 - present: XMPP-WG in IETF, drafts:
  - "core" Jabber protocol
  - "IM", Instant Messaging with Jabber protocol
  - "e2e", End-to-End security
  - "CPIM", mapping Jabber to CPIM
- You can store your contact list ("roster") and other data (like a *vCard*) on the server
- Standard IM 'presence' features
- The server queues up messages for you when you're away and delivers them as "delayed" messages when you come back
- Logging available at servers and clients

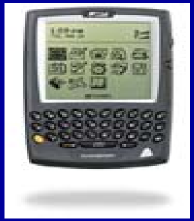
Jabber Existing Software

- Servers
  - — "jabberd" from jabber.com
    - GPL
    - Stable version is 1.4; beta 2.0 supports IETF protocol extensions (security)
  - — Other open-source: ejabberd, WPJabber
  - — Commercial: Rhombus, Accept
- Clients
  - — Gaim (popular universal IM client, works on Windows and Linux using Qt library, Mac?)
  - — PSI (Jabber-only client, Win/Lin/Mac)
  - — Many more: Exodus, RhymBox, Yabber, ...
  - — Still evaluating web interfaces

Jabber Clients & Devices

Palm

SMS



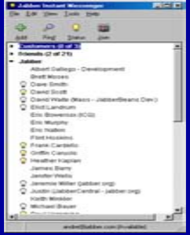
RIM

Pocket PC

J2ME

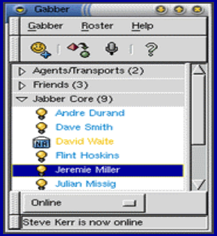
Symbian

WAP



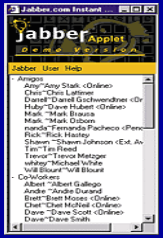
Customers (0 of 3)
Friends (2 of 21)
Jabber
Albert Gallego - Development
Brett Moses
Dave Smith
David Scott
David Waite (Macs - JabberBeans Dev)
Eliot Landrum
Eric Bowersox (ICQ)
Eric Murphy
Eric Nalton
Flint Hoskins
Frank Cardello
Griffin Canudo
Heather Kaplan
James Barry
Jennifer Wells
Jeremie Miller (jabber.org)
Justin (JabberCentral - jabber.org)
Keith Minkler
Michael Bauer
andre@jabber.com (Available)

Windows



Agents/Transports (2)
Friends (3)
Jabber Core (9)
Andre Durand
Dave Smith
David Waite
Flint Hoskins
Jeremie Miller
Julian Missig
Steve Kerr is now online

Linux



- Amigos
Amy~Amy Stark <Online>
Chris~Chris Lattimer
Darrell~Darrell Gschwendtner <Or
Huby~Dave Hubert <Online>
Mark ~Mark Brausa
Mark ~Mark Osborn
nanda~Fernanda Pacheco <Penc
Rick~Rick Hastey
Shawn ~Shawn Johnson <Ext. Av
Tim~Tim Reed
Trevor~Trevor Metzger
whitey~Michael White
Will Blount~Will Blount
- Co-Workers
Albert ~Albert Gallego
Andre ~Andre Durand
Brett~Brett Moses <Online>
Chet~Chet McNeil <Online>
Dave ~Dave Scott <Online>
Dave~Dave Smith

Web

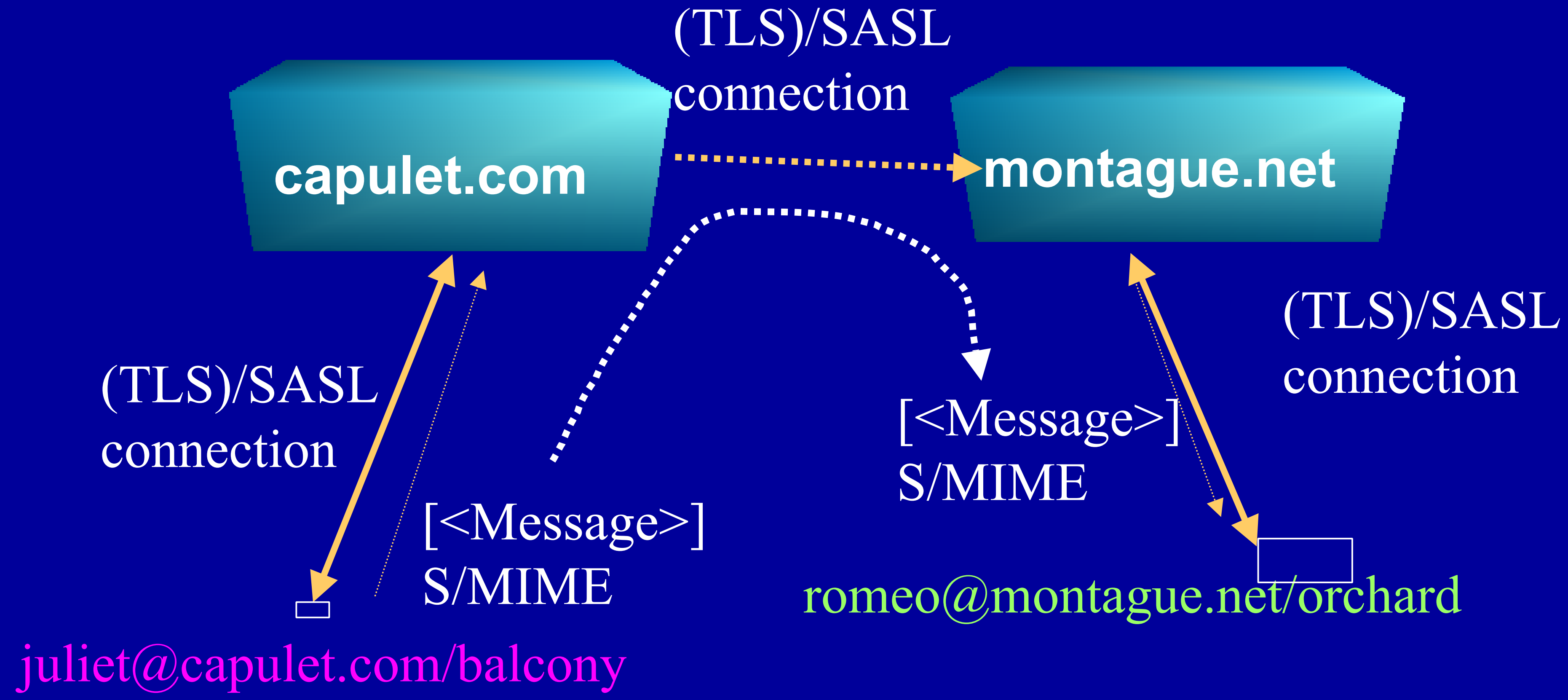
Source: http://downloads.weblogger.com/gems/andredurand/JabberNetworkInterop.ppt

Jabber in the AG

- Replace existing chat in the AG interface
- Run a Jabber server at each venue server
- Define a multi-user chat to correlate to each venue
- Provides a persistent space that includes areas not tied to the AG venues (e.g. Meadow and AG Tech Support)
- Provide access to AG chat without running the AG interface
- Allow private chats including across servers

Jabber Security

- Jabber 1.0 specs define required security



LBNL Jabber Enhancements

- Personal Archiver
  - Already have Python agent that archives chats and web page to search archives
  - Runs with its own credentials
  - Visible entity in the space
  - Invite archiver to chatroom to archive a conversation
- Archive controlled by individual running archive
- Anyone with proper credentials can run an archiver

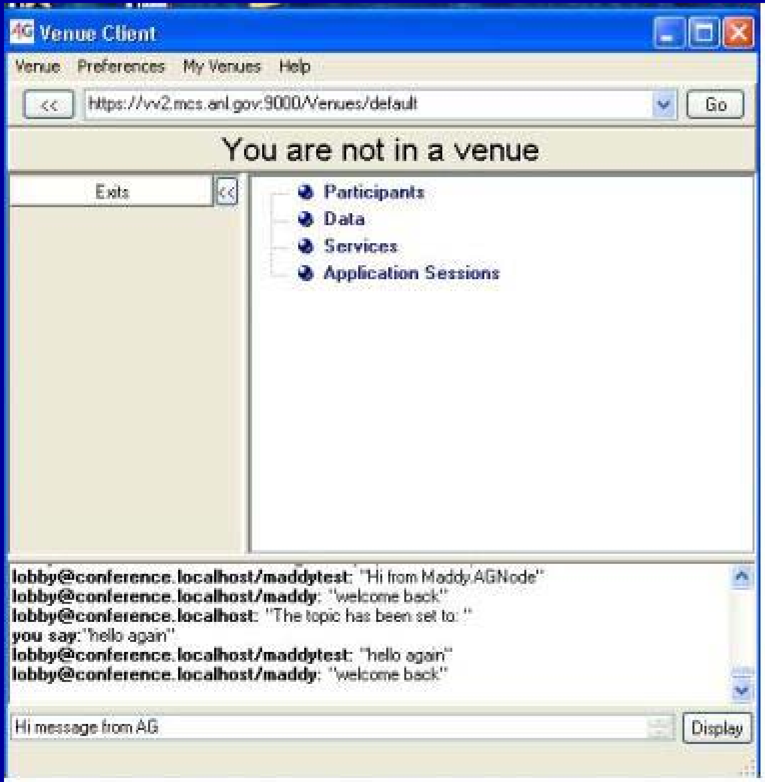
LBNL Jabber Security Plans

- Implement prototype flexible security model in Jabberd 2.0 server
- Minimize client modifications required
- Provide a collaborative space with a lobby that can be entered by anyone
- Implement controls to limit authorizations to those appropriate to a user’s current authentication
- Implement escort and vouching capabilities
- Gather user feedback
- Refine model

LBNL Jabber Plans for the AG

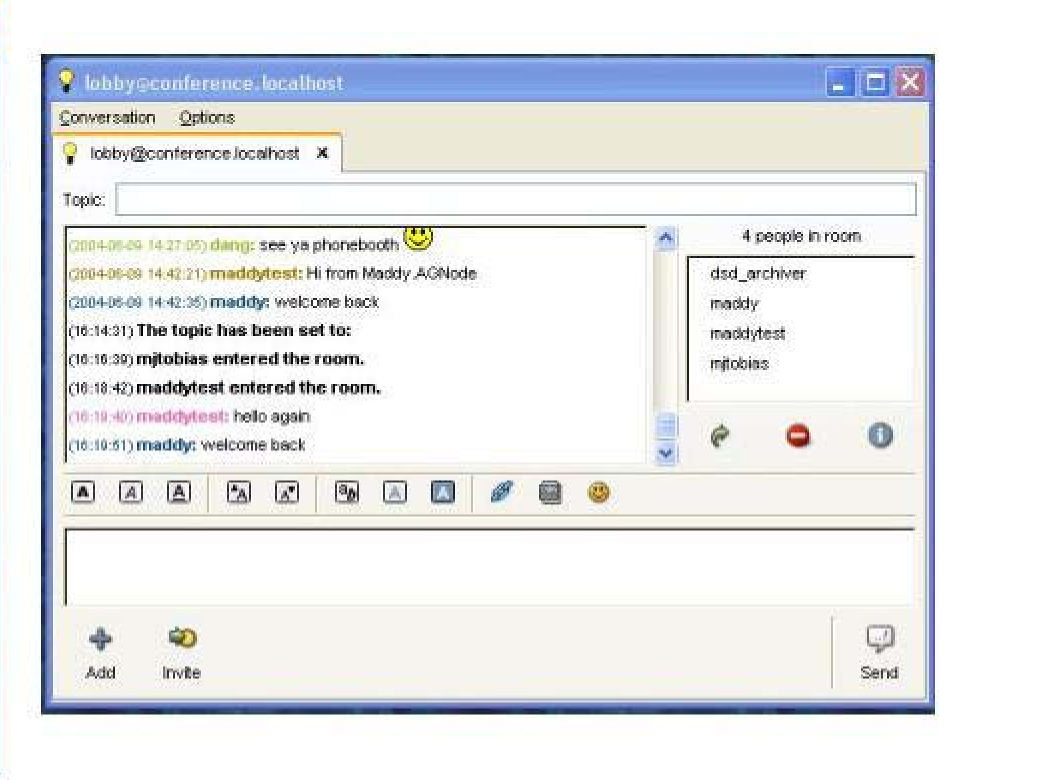
- Build a python Jabber library
- Integrate Jabber client capabilities into the AG interface
- Replace current AG chat with Jabber
- Integrate login into chat and AG interface
- Integrate Jabberd server with Venue server configuration (one MUC per venue)

Prototype



lobby@conference.localhost/maddytest: "Hi from Maddy AGNode"
lobby@conference.localhost/maddy: "welcome back"
lobby@conference.localhost: "The topic has been set to: "
you say:"hello again"
lobby@conference.localhost/maddytest: "hello again"
lobby@conference.localhost/maddy: "welcome back"

Hi message from AG



Topic:

(2004-06-09 14:27:05) **dang**: see ya phonebooth
(2004-06-09 14:42:21) **maddytest**: Hi from Maddy AGNode
(2004-06-09 14:42:35) **maddy**: welcome back
(16:14:31) **The topic has been set to:**
(16:16:39) **mjtobias entered the room.**
(16:18:42) **maddytest entered the room.**
(16:19:40) **maddytest**: hello again
(16:19:51) **maddy**: welcome back

4 people in room

dsd_archiver
maddy
maddytest
mjtobias